UDK 624.04:624.154

AULA, ANTTI, Calculation of pile foundations in plane case using matrix notation. Rakenteiden Mekaniikka 7 (1974) 3, p. 119...127.

A convenient calculation scheme for plane pile foundations is presented. The piles are assumed to be pin-ended and the foundation slab absolutely rigid. The displacement method of analysis is employed using as unknowns the two translations and one rotation of the slab. As an example of the use of the calculation scheme the pile system shown in Figure 4 is finally analysed.

UDK 691.175:678.01:539.371

JUMPPANEN, PAULI and MÄKELÄINEN,PENTTI, Time-temperature superposition in description of viscoelastic behaviour of polymers. Rakenteiden Mekaniikka 7 (1974) 3, p. 128...156.

The so called time-temperature superposition principle is used to produce temperature-dependent constitutive equations for linear viscoelastic materials. The applicability of these equations in the description of the creep and stress relaxation properties of different types of polymers is then considered.

Creep properties of polyvinyl-chloride are studied as an application of the theory, and creep tests at different temperatures are performed for this purpose. Possibilities of predicting long-time creep values by virtue of short-time experiments at rised temperatures are also discussed.

UDK 624.012.45:620.191:620.08

SARJA, ASKO, On crack mechanics of reinforced concrete structures and on determination of the crack width. Rakenteiden Mekaniikka 7 (1974) 3, p.157..172.

Crack mechanics of reinforced concrete structures and methods to determine the crack width are studied. The principles and design formulae in some crack formation theories are given. Principles of determination of the crack width in practical design are presented and the accuracy of the design formulae are studied.